SP PRO Grid fail - Generator Backup Kit Installation Note

Introduction

This installation note details the addition of the Grid fail-Generator backup kit to the SP PRO inverter. The kit is only suitable for SP PRO Series 2.

When the Grid fail-Generator backup kit is installed in the SP PRO, the system allows for the connection of a backup generator that is automatically started and stopped by the SP PRO as required during a grid outage.

Note: This document needs to be read in conjunction with the SP PRO Instruction Manual

SP PRO Grid – Gen Backup Models

There is a model for each nominal battery voltage. Ensure you use the correct model to match the nominal battery voltage of your SP PRO inverter.

SP PRO Model		Grid fail – Generator backup kit	
SPMC 240-AU	004723	SPMCA-GFGB-24V	004743
SPMC 241-AU	004724	SPMCA-GFGB-24V	004743
SPMC 481-AU	004725	SPMCA-GFGB-48V	004744
SPMC 482-AU	004726	SPMCA-GFGB-48V	004744
SPMC 1201-AU	004722	SPMCA-GFGB-120V	004745

SP PRO Grid fail – Generator Backup Kit

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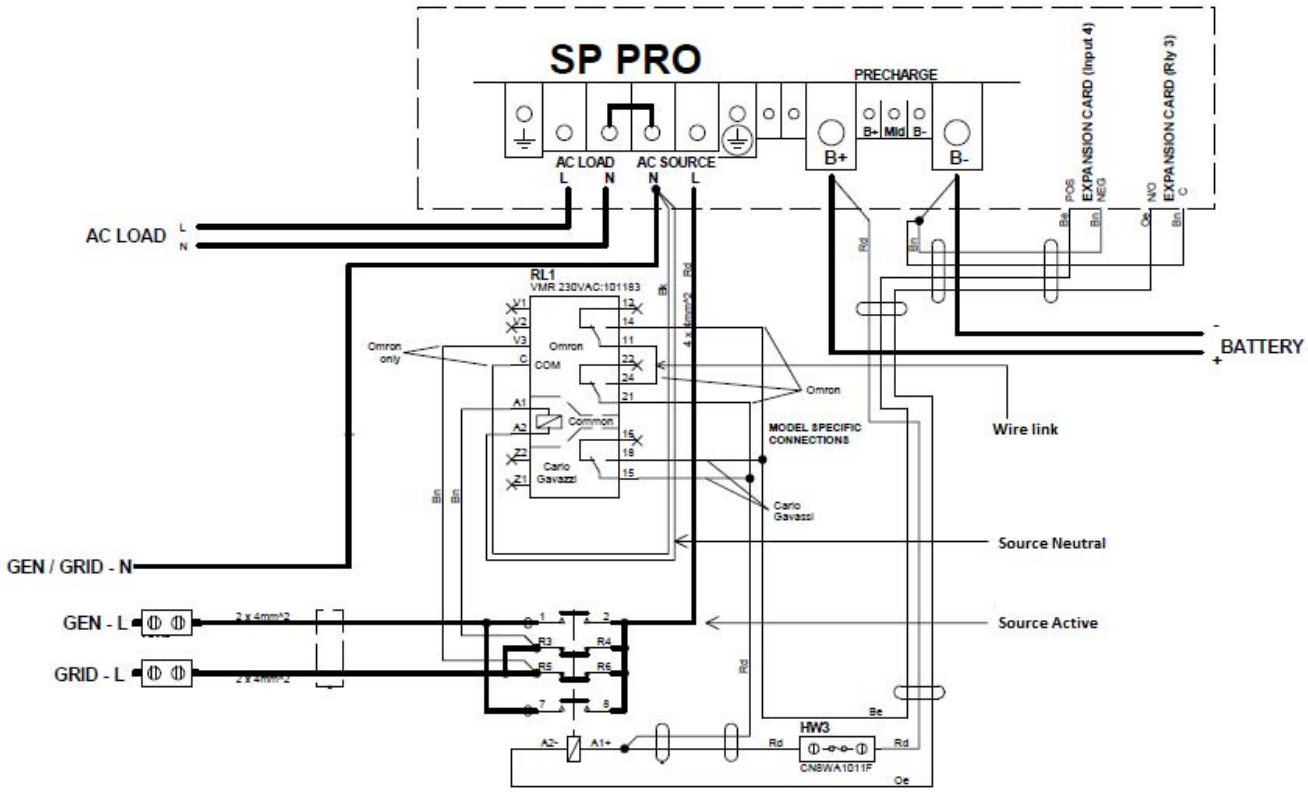
Wiring Overview

The following is an overview of the internal and external connections which form part of the Grid – Gen Backup Expansion housing.



Note: Diagram is applicable for 24V, 48V and 120V models.

SP PRO Installation

The SP PRO unit is installed as per the installation instructions in the user manual.
All wiring is carried out in the SP PRO with the exception of the grid L input and the generator L input wiring. These are wired to the Grid fail-Generator backup kit once it is installed.

When connecting the AC wiring to the SP PRO, please leave enough space for the Grid fail-Generator backup kit to be installed in the wiring cavity of the SP PRO.

Please note the following:

1. Backup loads connect into the AC Load L and N terminals in the SP PRO.
2. Only the L wire from the Grid fail-Generator backup connects into the AC Source L terminal within the SP PRO.
3. The Grid L connects to the GRID L terminal on the Grid fail-Generator backup kit. The Grid N connects to the AC source N on the SP PRO.
4. The Generator L connects to the GEN L terminal on the Grid fail-Generator backup kit. The Generator N connects to the AC source N on the SP PRO.

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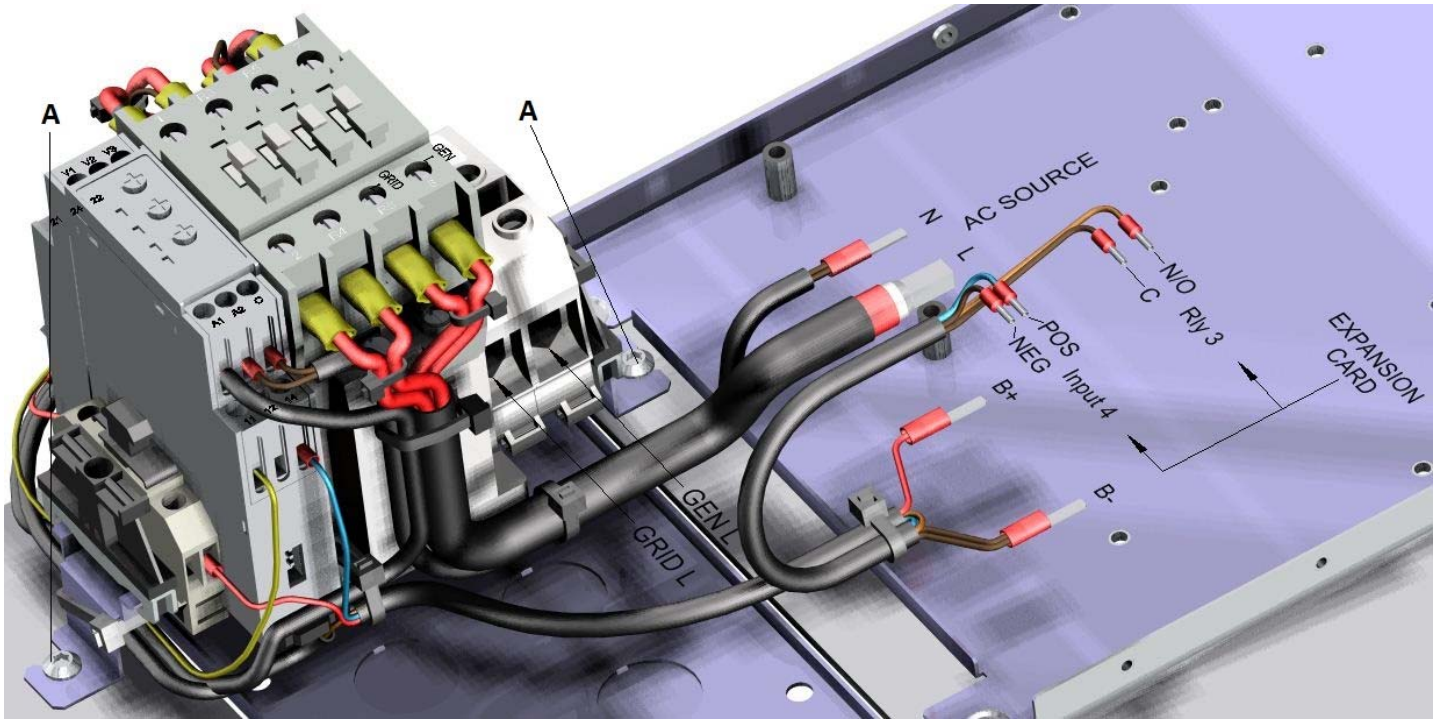
Once the SP PRO has been installed and wired, follow the steps below to install the Grid fail – Generator backup kit.



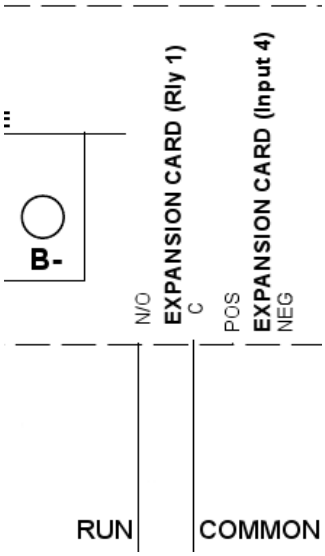
Installing the Grid fail-Generator backup kit into the SPPRO

Referring to the diagram above, follow the steps below to install the kit.

1. Fit 2 x 5mm mounting screws to the base of the SP PRO inverter at position **A**. Leave screws loose.
2. Fit Grid fail-Generator backup kit to screws as shown. Tighten screws.
3. Wire the connections from the Grid fail-Generator backup kit to the SP PRO as shown. NOTE the polarity of the B+ and B- connections
4. Wire the Generator L and Grid L to the GEN L and GRID L terminals respectively on the Grid fail-Generator backup kit.
5. Double check all terminals are tight and clamping the wire only and not the insulation.

Generator Control Wiring

The Generator Run control wiring is wired into the expansion card as shown. This configuration is for a controller that require two wires to be closed to start and run and then opened to stop the generator.



Note: Refer to Tech Note TN0025 for other control options.

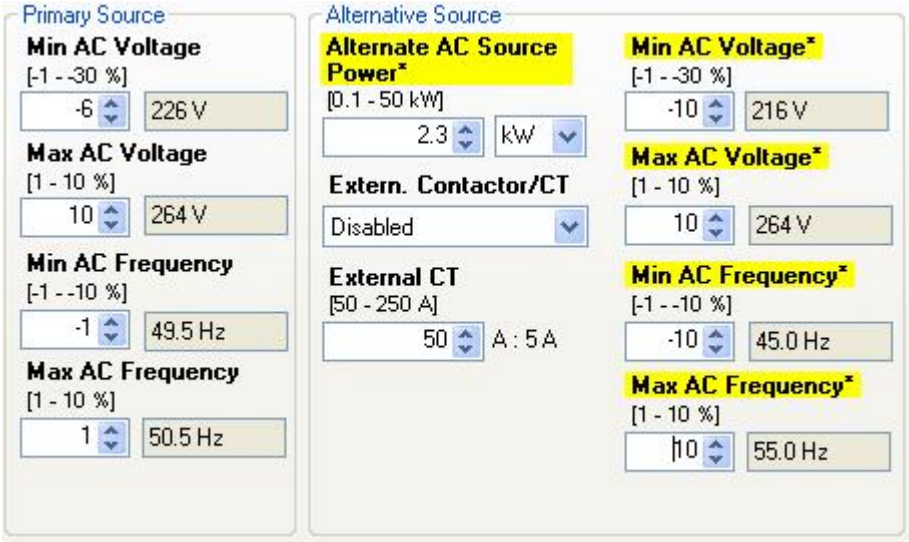
SP PRO Configuration – Additional Configuration Settings

The following details the additional settings required to activate the Grid / Generator backup hardware installed. This is in addition to settings for grid operation.

AC Source – AC Input

The Alternative Source must set to accommodate the different power limit and voltage/frequency range that the SP PRO will accept when the backup generator is running. The Primary Source settings are shown by way of comparison between grid and backup generator.

Alternate AC Source Power – maximum power SP PRO will draw from backup generator
Min, Max AC Voltage – allowable voltage range from generator
Min, Max AC Frequency – allowable frequency range from generator

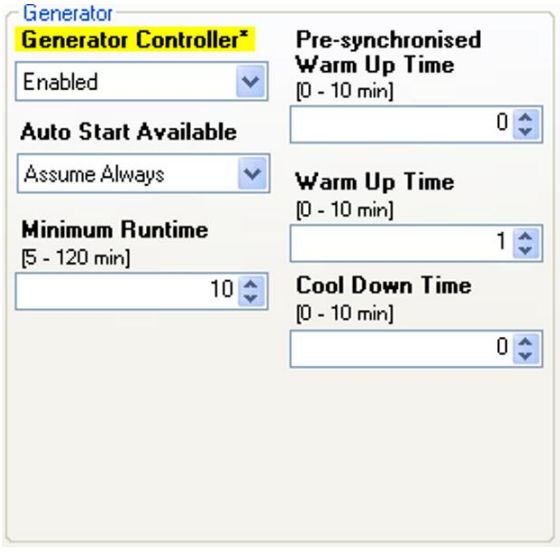


Note: Default Values shown - Adjust values to suit the backup generator. External CT and Extern. Contactor/CT settings are not used in this configuration.

AC Source – Generator Controller Settings

Generator Controller: Enabled

Note: Remaining settings can be adjusted based on specific backup generator requirements. See SP PRO User Manual – Generator Controller Settings for further details.



Inputs / Outputs

The SP PRO must be configured to control the correct inputs and outputs to monitor and switch between the grid and backup generator.

Digital Inputs –

Normal/Alternate AC Input Power Selector: Follow Backup Select

Inhibit Export Input: Follow Backup Select

Note: Low Batt Shut Down Override Input setting is not used in this configuration.

Grid Fail Generator Backup –

Grid Fail Backup: Enabled

Grid Available Input: Digital Control Input 4

Backup Select Output: Relay Output 3

Generator Outputs –

Generator Run Output – Relay Output 1

The actual generator output type used will depend on what signal is required by the backup generator to start and stop. Refer to generator documentation for details.

Note: Default settings shown. Start Output is not used in this configuration.

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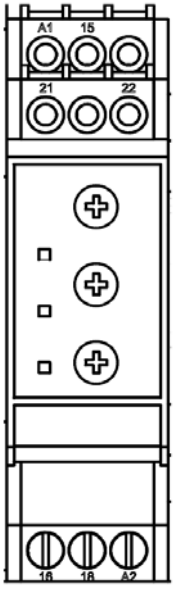
SP PRO Configuration – Automatic Generator Control

The generator will run upon loss of grid supply on the default settings based on low battery voltage or SoC if enabled. If you wish to enhance this operation, consult SP PRO User manual – Generator Automatic Start for full details.

Reference Information

RL1 - VOLTAGE MONITOR

The internal voltage monitor(RL1) is factory set and should not be adjusted. The factory setting is detailed below:



: + 15 %

: - 8 %

: 3 s

: DIP-switches – under cover –

1 – ON (DEL-REC)
2 – OFF (N.E.)
3 – ON (6 s)
4 – OFF (INHIBIT)
5 – ON (230 VAC)
6 – OFF (230 VAC)

WARNING: Do not open the DIP-switches cover if the Power Supply is ON.

Additional Information

Selectronic web site – http://www.selectronic.com.au or contact the Selectronic Sales Team.